

NSF/USDOT PARTNERSHIP FOR EXPLORATORY RESEARCH ON INFORMATION AND COMMUNICATIONS SYSTEMS FOR SURFACE TRANSPORTATION (ICSST)

Program Solicitation

NSF 01-87

DIVISION OF CIVIL AND MECHANICAL SYSTEMS
DIRECTORATE FOR ENGINEERING

FULL PROPOSAL DEADLINE(S): June 8, 2001



NATIONAL SCIENCE FOUNDATION



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SUMMARY OF PROGRAM REQUIREMENTS

GENERAL INFORMATION

Program Title: NSF/USDOT PARTNERSHIP FOR EXPLORATORY RESEARCH ON INFORMATION AND COMMUNICATIONS SYSTEMS FOR SURFACE TRANSPORTATION (ICSST)

Synopsis of Program:

The Engineering Directorate of the National Science Foundation (NSF) announces a research initiative jointly sponsored with the US Department of Transportation (USDOT) for Exploratory Research on Information and Communications Systems for Surface Transportation. The goal of the NSF/USDOT program is to support basic research aimed at discovering ways innovative information and information/communication technologies can be integrated into surface transportation systems in order to meet challenges and constraints related to competitiveness, congestion, safety, land use, energy, and environment. This program is intended to: 1) foster innovation and innovative uses of technology in all modes of surface transportation; 2) expand the knowledge base needed to manage the complexity and the vulnerability of surface transportation systems, including interactive effects with natural systems; and 3) offer opportunities to address technical as well as non-technical influences by engaging "supporting" disciplines, such as computer science and engineering, natural and social sciences, operations research, systems engineering, and telecommunications.

Cognizant Program Officer(s):

- Dr. Miriam Heller, Civil and Mechanical Systems, Program Director, telephone: 703/292-7025, e-mail: mheller@nsf.gov.
- Dr. Ronald Rardin, Design, Manufacturing and Industrial Innovation, Program Director, telephone: 703/292-7081, e-mail: rrardin@nsf.gov.
- Dr. Paul Werbos, Electrical and Communications Systems, Program Director, telephone: 703/292-8339, e-mail: pwerbos@nsf.gov.
- Dr. A. Frederick Thompson, Environmental Technology, Program Director, telephone: 703/292-8320, e-mail: athompso@nsf.gov.
- Dr. Nina Lam, Geography and Regional Sciences, Program Director, telephone: 703/292-8754, e-mail: nlam@nsf.gov.
- Dr. Lawrence Brandt, Digital Government, Program Director, telephone: 703/292-8980, e-mail: lbrandt@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.041 --- Engineering

ELIGIBILITY INFORMATION

- **Organization Limit:** None
- **PI Eligibility Limit:** A Principal Investigator may submit only one proposal, and may be a co-Principal Investigator on no more than one other proposal.
- **Limit on Number of Proposals:** None

AWARD INFORMATION

- **Anticipated Type of Award:** Standard Grant
- **Estimated Number of Awards:** 8-12 exploratory 12-month awards of up to \$100,000
- **Anticipated Funding Amount:** Approximately \$1,000,000 in FY2001 subject to availability of funds. NSF anticipates approximately 50% of this support to be furnished by USDOT.

PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

- **Full Proposals:** Deviations From Standard Preparation Guidelines
 - The program announcement/solicitation contains deviations from the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full program announcement/solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required.
- **Indirect Cost (F&A) Limitations:** Not Applicable.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full program announcement/solicitation for further information.

C. Deadline/Target Dates

- **Letters of Intent (optional):** None
- **Preliminary Proposals (optional):** None
- **Full Proposal Deadline Date(s):** June 8, 2001

D. FastLane Requirements

- **FastLane Submission:** Full Proposal Required
- **FastLane Contact(s):**
 - Kimberly Bryant, ENG/CMS, telephone: 703/292-7006, e-mail: kbryant@nsf.gov.

PROPOSAL REVIEW INFORMATION

- **Merit Review Criteria:** National Science Board approved criteria apply.

AWARD ADMINISTRATION INFORMATION

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Standard NSF reporting requirements apply.

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I. INTRODUCTION

The Engineering Directorate of the National Science Foundation (NSF) and the U.S. Department of Transportation (USDOT) announce a joint research initiative for Exploratory Research on Information and Communications Systems for Surface Transportation (ICSST). This initiative encourages researchers in the scientific and engineering disciplines as well as disciplines not traditionally involved in transportation research (e.g., the social, behavioral, and economic sciences) to explore basic research ideas aimed at meeting long-term future needs for surface transportation. The goal of the NSF/USDOT partnership is to initiate a basic research agenda aimed at discovering innovative ways for information and information/communication technologies to be developed and integrated into surface transportation systems in order to meet the challenges and constraints related to congestion, safety, land use, energy, and environment. This program is intended to: 1) foster innovation and innovative uses of technology in all modes of surface transportation; 2) expand the knowledge base needed to manage the complexity and the vulnerability of surface transportation systems, including interactive effects with natural systems; and 3) offer opportunities to address technical as well as non-technical influences by engaging "supporting" disciplines, such as computer science and engineering, natural and social sciences, operations research, systems engineering, and telecommunications.

To complement the substantial resources available for research aimed at incrementally improving today's surface transportation systems and related information technologies, this initiative specifically encourages high risk approaches. Proposers should propose research that:

- Targets the development and strategies for deployment of new information and communications technologies having the potential to advance surface transportation systems operations.
- Builds and tests our current understanding of how planning, engineering, and operations policies affect surface transportation systems as well as the constructed, natural, and social systems with which they interact.
- Seeks dramatic breakthroughs in fundamental concepts of surface transportation provision, including technology-based ways to meet the functional demands for services by or new modes of transportation.

This initiative will define opportunities and new directions for basic research in surface transportation. It will expand the research community in surface transportation to include broad disciplinary coverage and multidisciplinary teams.

II. PROGRAM DESCRIPTION

BACKGROUND

For surface transportation systems of the future, the nation needs radically different alternatives to surface transportation that address the inexorably increasing challenges of traffic congestion, safety, an aging driver population, deteriorating roadway infrastructure, land use restrictions, dependence on non-renewable fuels, and environmental degradation. These alternatives must reflect, adapt to, and exploit advances in information and communications technologies, the

changing regulatory climate (e.g., deregulation), longer term economic thinking, and a growing awareness of the role of human, social and cultural values in transportation decision-making.

Most applied research aimed at advancing information and communications technologies for surface transportation currently is conducted through the U.S. Department of Transportation's (USDOT) Intelligent Transportation Systems Joint Program Office as well as the Federal Highway Administration, Federal Transit Administration, and the state DOTs. USDOT is also developing agendas for new short and medium research initiatives with the Transportation Research Board, the Institute of Transportation Engineers, and the Intelligent Transportation Systems of America. These programs, however, focus on short-term change and mirror the 5-year planning horizon governing the Intermodal Surface Transportation and Equity Acts (ISTEA, 1991 and TEA-21, 1997) as well as the mission-orientation of the sponsoring agencies.

The National Science Foundation is a source of basic research funding for transportation research, which has been sponsored in the Directorate for Engineering through the Divisions of Civil and Mechanical Systems (CMS), Design, Manufacture and Industrial Innovation (DMII), and Electrical and Communications Systems (ECS); in the Computer and Information Systems Engineering Directorate (CISE); and in the Social, Behavioral, and Economic Sciences (SBE) Directorate.

The result of this parallel pursuit of basic and applied research was the subject of discussion at the NSF/USDOT workshop held at the University of Illinois at Chicago in October 2000, which explored long-term, basic research needs in surface transportation systems. The report from this workshop can be accessed at http://www.utc.uic.edu/~mcneil/Workshop_report.pdf. This workshop served to coalesce current thinking in the field by researchers and practitioners from a wide array of disciplines. Proposers may want to consider the recommendations from this workshop in preparing their proposals for this solicitation.

PROGRAM DESCRIPTION

Advances in information and communications technologies have been radically changing the way Americans manufacture, provide business services, educate, recreate, and communicate. Equally radical changes in the transportation of people and goods should be anticipated. These changes may exacerbate or ameliorate the current trends in surface transportation toward growing congestion and associated declines in safety, dangerously increasing consumption of non-renewable fuels, and environmental quality.

The objective of this NSF/USDOT partnership is to support research that

- Targets the development and strategies for deployment of new information and communications technologies having the potential to advance surface transportation systems operations and offer substantial enhancements in capacity utilization, safety, resource use, and environmental impact.
- Expands and verifies our understanding of the impact of planning, engineering, and operations policies on surface transportation systems as well as on the constructed, natural, and social systems with which they interact.

- Seeks dramatic breakthroughs in fundamental concepts of surface transportation provision, including the introduction of new, technology-based ways to meet the functional demands for services, and including new modes and new paradigms of transportation.

To achieve these objectives, proposals are invited that follow *technical themes* focused on information and communications technologies to support integrated surface transportation systems operation (e.g., innovative vehicular navigation systems with specialized computer-human interfaces; virtual reality systems for training, evaluation and analysis and operations); systems integration (e.g., centralized ground control systems, distributed travel management and optimization, unplanned or extreme event management, coordinated mobile communication and road infrastructure systems, and new technologies to move goods in congested areas); and enhanced data and analysis tools (e.g., improved measurement/metrics/standards, data fusion and management, integrated sensing and collection, and advanced modeling and simulation).

Proposals are also sought that augment the technical themes with *non-technical themes* to address institutional issues (e.g., information ownership and privacy), equity issues (e.g., the interplay between surface transportation systems, demographics, economics, cultural and social values), and finally impact assessment and analysis (particularly as related to emerging trends in E-commerce, deregulation of transit and highway systems, environmental constraints, and economic variability).

Proposals must be exploratory in nature. It is expected that the specific projects proposed will suggest future directions for the NSF/USDOT Partnership. Approximately one year after the initiation of the exploratory awards, a workshop is planned which will focus on the development of a science and technology base for information and communications systems for surface transportation. Progress reports by grantees will provide a balance and a focus to the discussions. Funds to support participation in a two-day workshop to be held in the Washington, DC area should be included in the proposal budget. Further details on the workshop as they become available will be posted on the CMS web-site (www.eng.nsf.gov/cms/iis).

III. ELIGIBILITY INFORMATION

The categories of proposers identified in the [Grant Proposal Guide](#) are eligible to submit proposals under this program announcement/solicitation. A Principal Investigator may submit only one proposal, and may be a co-Principal Investigator on no more than one other proposal.

IV. AWARD INFORMATION

A total of 8 to 12 awards, of up to \$100,000 and 12 months duration are expected. The estimated program budget, number of awards and average award size/duration are subject to the availability of funds. NSF anticipates approximately 50% of this support to be furnished by USDOT and USDOT will participate in the review process.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Web Site at: <http://www.nsf.gov/cgi-bin/getpub?nsf012>. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

On the Cover Sheet (NSF Form 1207) prepared for FastLane submission, the proposal title must start with "NSF/USDOT" .

Proposers are reminded to identify the program solicitation number (NSF 01-87) in the program announcement/solicitation block on the proposal Cover Sheet (NSF Form 1207). Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost sharing is not required in proposals submitted under this Program Solicitation.

Other Budgetary Limitations: Award amounts are limited to a maximum of \$100,000 for up to 12 months. The proposal budget must include funds to support participation in a two-day workshop in the Washington, DC area.

C. Deadline/Target Dates

Proposals must be submitted by the following date(s):

Full Proposals by 5:00 PM local time: June 8, 2001

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this Program Solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: <http://www.fastlane.nsf.gov/a1/newstan.htm>. For FastLane user support, call 1-800-673-6188.

Submission of Signed Cover Sheets. The signed copy of the proposal Cover Sheet (NSF Form 1207) must be postmarked (or contain a legible proof of mailing date assigned by the carrier) within five working days following proposal submission and be forwarded to the following address:

National Science Foundation
DIS – FastLane Cover Sheet
4201 Wilson Blvd.
Arlington, VA 22230

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgements.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

Principal Investigators should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both of the above-described NSF merit review criteria. NSF staff will give these elements careful consideration in making funding decisions.

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

A summary rating and accompanying narrative will be completed and signed by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Mail and/or panel review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at its own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1)* or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Web site at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (301) 947-2722 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Web site at <http://www.nsf.gov/cgi-bin/getpub?gpm>. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Web site at <http://www.gpo.gov>.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Approximately 30 days before expiration, NSF will send a notice to remind the PI of the requirement to file the final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for that PI. PIs should examine the formats of the required reports in advance to assure availability of required data.

NSF has implemented an electronic project reporting system, available through FastLane. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding NSF/USDOT PARTNERSHIP FOR EXPLORATORY RESEARCH ON INFORMATION AND COMMUNICATIONS SYSTEMS FOR SURFACE TRANSPORTATION should be made to:

- Dr. Miriam Heller, Civil and Mechanical Systems, Program Director, telephone: 703/292-7025, e-mail: mheller@nsf.gov.
- Dr. Ronald Rardin, Design, Manufacturing and Industrial Innovation, Program Director, telephone: 703/292-7081, e-mail: rrardin@nsf.gov.
- Dr. Paul Werbos, Electrical and Communications Systems, Program Director, telephone: 703/292-8339, e-mail: pwerbos@nsf.gov.
- Dr. A. Frederick Thompson, Environmental Technology, Program Director, telephone: 703/292-8320, e-mail: athompso@nsf.gov.
- Dr. Nina Lam, Geography and Regional Sciences, Program Director, telephone: 703/292-8754, e-mail: nlam@nsf.gov.
- Dr. Lawrence Brandt, Digital Government, Program Director, telephone: 703/292-8980, e-mail: lbrandt@nsf.gov.

For questions related to the use of FastLane, contact:

- Kimberly Bryant, ENG/CMS, telephone: 703/292-7006, e-mail: kbryant@nsf.gov.

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at <http://www.nsf.gov/cgi-bin/getpub?gp>. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF [E-Bulletin](#), which is updated daily on the NSF web site at <http://www.nsf.gov/home/ebulletin>, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's [Custom News Service](#) (<http://www.nsf.gov/home/cns/start.htm>) to be notified of new funding opportunities that become available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement/solicitation for further information.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation about NSF programs, employment or general information. TDD may be accessed at (703) 292-5090, FIRS at 1-800-877-8339.

The National Science Foundation is committed to making all of the information we publish easy to understand. If you have a suggestion about how to improve the clarity of this document or other NSF-published materials, please contact us at plainlanguage@nsf.gov.

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Pursuant to 5 CFR 1320.5(b), an agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Information Dissemination Branch, Division of Administrative Services, National Science Foundation, Arlington, VA 22230, or to Office of Information and Regulatory Affairs of OMB, Attention: Desk Officer for National Science Foundation (3145-0058), 725 17th Street, N.W. Room 10235, Washington, D.C. 20503.

OMB control number: 3145-0058.